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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,983	06/04/2001	Satoshi Ichikawa	208526US-2S CONT	3486

22850            7590            10/23/2002

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EXAMINER

SUMMONS, BARBARA

ART UNIT            PAPER NUMBER

2817

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/871,983	Applicant(s) Ichikawa et al.
Examiner Barbara Summons	Group Art Unit 2817

- The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 (three) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- Responsive to communication(s) filed on 7/18/02
- This action is FINAL.
- Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- Claim(s) 1-7 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- Claim(s) \_\_\_\_\_ is/are allowed.
- Claim(s) 1, 2 and 7 is/are rejected.
- Claim(s) 3-6 is/are objected to.
- Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

Application Papers

- The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.
- The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- The specification is objected to by the Examiner.
- The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- All  Some\*  None of the:
  - Certified copies of the priority documents have been received.
  - Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

Attachment(s)

- Information Disclosure Statement(s), PTO-1449, Paper No(s). 6
- Notice of Reference(s) Cited, PTO-892
- Notice of Draftsperson's Patent Drawing Review, PTO-948
- Interview Summary, PTO-413
- Notice of Informal Patent Application, PTO-152
- Other \_\_\_\_\_

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## DETAILED ACTION

### *Maintained Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 and 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Dai et al. U.S. 5,896,071 (of record) for reasons of record repeated below for Applicants' convenience (leaving out comments on previously rejected claim 8 which has been canceled).

Regarding claims 1 and 7, Fig. 9 of Dai et al. discloses a surface acoustic wave (SAW) device comprising two or more transducers [i.e. resonant single phase unidirectional transducers (RSPUDTs) R1, R2, R1M and R2S] formed on a single chip piezoelectric substrate 76 and including a pair of regions (e.g. RSPUDTs R1 and R2), each of the regions/RSPUDTs having a pair of comb electrodes whose surface wave propagation directions are opposite to each other, as best seen in Fig. 7. That is, each of the RSPUDTs which are considered a "region" labeled B as shown in Fig. 5, is made up of the structure in Fig. 7 which has a pair of comb electrodes 42 and 44, and wherein propagation directions to the left and right of the central finger 62 are opposite to each other toward the central finger 62 (see col. 5, lns. 34-40). Furthermore, at least two of the transducers, R1 and R1M, are connected in parallel between terminal 78 and ground.

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Regarding claim 2, Fig. 10 shows an embodiment wherein the transducer R1 has a triple-mode resonant frequency characteristic provided by resonant cavity C1, and the remaining two resonant characteristics of the top filter in the figure are provided by resonant cavities C2 and C3. In Fig. 10 the transducers R2 and R2S are connected in parallel between a terminal and ground.

*Allowable Subject Matter*

3. Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Reasons for indicating allowable subject matter remain as stated in paragraph 7 of the prior Office action mailed 4/18/02.

*Response to Arguments*

5. Applicant's arguments filed 7/18/02 have been fully considered but they are deemed not persuasive.

First, Applicants argue that the prior art cannot achieve both a wide bandwidth and steep skirt characteristics, and Applicants state that the present invention does achieve these results due to the resonance points of the two or more RSPUDTS connected in parallel being "arranged, preferable at regular intervals, on the frequency axis..." (see the last two paragraphs of page 4 of the amendment received 7/18/02). This argument is not persuasive because it is not

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commensurate with the scope of the rejected claims, but with those claims that were indicated to contain allowable subject matter.

Next, Applicants argue that the invention allows the bandpass characteristics to be adjusted freely by slightly changing the ratio between the number of electrode fingers in the forward and backward direction SPUDTS (see the first full paragraph on page 5 of the amendment). This argument is not persuasive because it is not commensurate with the scope of the rejected claims, and because Dai et al. also discloses adjusting the filter characteristics by adjusting the transduction and reflection (which requires adjusting the number of fingers) over the length of the RSPUDT (a.k.a. WWSCR/Withdrawal Weighted Single Cavity RSPUDT)[see col. 5, Ins. 10-20 and Fig. 5 which was used in the rejection]. The area B in Fig. 5 of Dai et al. is shown in Fig. 7.

Finally, Applicants argue that Dai et al. discloses a “*device*”, and admits that it includes a “plurality of transducers having regions, in which the propagation directions of acoustic waves are opposite to each other, are connected in parallel with each other” (see page 5, lines 10-13 of the amendment), but that Dai et al. does not disclose “*filters*” wherein “at least two of the transducers of the acoustic wave *filters* are connected in parallel with each other” (see page 5, lines 13-17 of the amendment). This argument is not persuasive because each track of the device of Dai et al. is indeed a resonator filter (see e.g. Dai et al. at the abstract, lines 1-3), and as discussed in the rejection above, Fig. 9 of Dai et al. discloses the transducer R1 of the upper track resonator filter

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being connected in parallel with the transducer R1M of the lower track resonator filter between terminal 78 and ground.

*Conclusion*

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication should be directed to Barbara Summons at telephone number (703) 308-4947, FAX no. (703) 308-7724, receptionist's no. (703) 308-0956.



Barbara Summons  
Patent Examiner  
Art Unit 2817

bs  
October 18, 2002